



## California Sportfishing Protection Alliance

*"An Advocate for Fisheries, Habitat and Water Quality"*

3536 Rainier Avenue, Stockton, CA 95204

Tel: 209-464-5067, Fax: 209-464-1028, E: [deltakeep@aol.com](mailto:deltakeep@aol.com)

13 July 2006

Mr. Robert Schneider, Chairman  
Ms. Pamela Creedon, Executive Officer  
Mr. Kenneth Landau, Assistant Executive Officer  
Mr. Barry Hilton, P.E.  
Regional Water Quality Control Board  
Central Valley Region  
11020 Sun Center Drive, Suite 200  
Rancho Cordova, CA 95670-6144

VIA: Electronic Submission  
Hardcopy to follow

RE: Waste Discharge Requirements for Mountain House Community Services District  
Wastewater Treatment Facility, San Joaquin County

Dear Messrs Schneider, Landau, Hilton and Ms. Creedon;

The California Sportfishing Protection Alliance, Watershed Enforcers and San Joaquin Audubon (hereinafter "CSPA") has reviewed the Central Valley Regional Water Quality Control Board's (hereinafter "Regional Board") tentative NPDES permit (hereinafter "Order" or "Permit") for the Mountain House Community Services District wastewater treatment facility (hereinafter "Discharger") and submits the following comments.

CSPA requests status as a designated party for this proceeding. CSPA has been and is presently involved in numerous state and federal proceedings concerning the Sacramento-San Joaquin Delta and a number of its members reside in the vicinity of the discharge and boat, fish and recreate in Old River and the South Delta.

The waters and fisheries of the South Delta are among the most severely degraded in the Central Valley. Beneficial uses are impaired and fishery populations are plummeting. There is little or no remaining assimilative capacity for increased loading of numerous pollutants. Accordingly, the Regional Board must ensure that any permit allowing waste discharges into these waters rigorously complies with explicit state and federal statutory and regulatory requirements. Unfortunately, the tentative Permit contemplates increased loading of impairing pollutants to impaired waterways, contravenes myriad state and federal regulations and demonstratively fails to protect the estuary's degraded fisheries and receiving waters. Indeed, the Order could not be appreciably less protective had it been written by the Discharger. It provides additional evidence of the recent u-turn in water quality protection embraced by the Regional Board that threatens to unravel almost twenty years of incremental progress in protecting Central Valley waterways.

The following set forth our principle concerns:

1. *The receiving waters are seriously degraded and habitat for listed species and require the most stringent protection*
2. *The proposed permit does not comply with the CTR or SIP which prohibits compliance schedules for new or recommencing dischargers*
3. *The proposed permit does not contain a protective or legal effluent limitation for EC, TDS or Chloride*
4. *The Reasonable Potential Analyses fail to comport with federal requirements and must be recalculated*
5. *The antidegradation analysis is woefully inadequate and inconsistent with federal and state antidegradation policy*
6. *The limitation for acute toxicity is inconsistent with Basin Plan and federal requirements*
7. *The Order fails to contain an effluent limitation for chronic toxicity*
8. *The Order violates state and federal endangered species acts*
9. *Temperature limitations violate the Basin Plan, Thermal Plan and federal regulations*
10. *Monitoring requirements are inadequate*
11. *The Permit fails to adequately discuss CEQA*
12. *A significant number of the Effluent Limitations are not limited for mass*
13. *Effluent limits for metals were calculated using an incorrect hardness value and must be recalculated*
14. *The permit has no Receiving Water Limitation for turbidity*
15. *The permit inappropriately allows the permit to be reopened to reassess assimilative capacity of the receiving stream while end-of-pipe limitations may not be sufficiently stringent*
16. *The mercury mass loading limitation calculation is incorrect and the Permit must include a limitation for methylmercury*

Our detailed comments follow:

**I. The receiving waters are seriously degraded and habitat for listed species and require the most stringent protection**

South Delta waterways are crucial habitat and migration corridors for a number species protected under federal and state endangered species acts. Species include: Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha* - federal and state listed as threatened); Central Valley steelhead (*Oncorhynchus mykiss* -federal listed as threatened); Delta smelt (*Hypomesus transpacificus* - federal and state listed as threatened); Sacramento splittail (*Pogonichthys macrolepidotus* - California species of concern); winter-run Chinook salmon (*Oncorhynchus tshawytscha* - federal and state listed as endangered); fall/late-fall-run Chinook salmon is both a federal and California species of concern; Green sturgeon (*Acipenser medirostris*) is federally listed as threatened and is a California species of concern and longfin smelt (*Spirinchus*

*thaleichthys*), hardhead (*Mylopharodon conocephalus*) and Sacramento perch (*Archoplites interruptus*) are identified as California species of concern. Further, a number of non-special status species, including striped bass, largemouth bass, smallmouth bass, catfish and panfish are found throughout the South Delta.

The Delta's pelagic fisheries are experiencing catastrophic collapse. The California Department of Fish and Game's Delta smelt index, a measure of relative abundance, was only 26 in last fall's mid-water trawl survey compared to 899 in 1995 (the lowest in the 43 years of record). Longfin smelt abundance index was 129, the second lowest on record (it was 81,790 in 1967). The striped bass index was 121 (it was 20,038 in 1967). The Threadfin shad population index was 2866 (as recently as 2001, it was 14,402). Adult white sturgeon numbers have dropped from an estimated 144,000 in 1998 to a 50-year low of about 10,000 in 2005. Estuary phytoplankton production has decreased about one order of magnitude while zooplankton production is down one to two orders of magnitude.

The special team of federal and state scientists investigating the pelagic organism decline in the Delta has identified toxic pollutants as one of the three major suspected causes of the collapse of the pelagic fishery. For example, recent U.C. Davis studies of Delta species such as striped bass found all of the fish tested had gastric inflammations, parasitic infestations, liver lesions, infections or a combination. These findings are consistent with earlier work that found nerve damage and developmental abnormalities among newborn bass. Scientists attribute these problems to a chemical stew of pesticides, herbicides and cancer-causing elements in Delta waterways, which in addition to fish habitat serve as drinking water for two-thirds of Californians. Indeed, samples of Delta water collected by U.C. Davis' Aquatic Toxicology Laboratory, as part of its role in evaluating the pelagic fish decline, was found to be toxic to test species. Monitoring by the San Joaquin County and Delta Water Quality Coalition during 2005 found significant toxicity to zooplankton, fish and invertebrates in South Delta waterways. Monitoring of Delta waters by U.C. Davis staff, pursuant to the Irrigated Lands Monitoring Program, during 2004 and 2005 likewise identified toxicity and a number of pesticides and metals exceeding freshwater aquatic life standards. Pesticides and other contaminants routinely found in POTW effluent have also been found in fish tissue, placing subsistence-fishing communities at risk.

The Little Hoover Commission found last fall in its CALFED analysis that "*The Delta is so critical to California's future that no water policy will be successful if the estuary is not restored.*"

Receiving waters in the vicinity of the Discharger's outfall are degraded and included on the California 303(d) list of impaired waterways as incapable of supporting identified beneficial uses because of diazinon, chlorpyrifos, organo-chlorine Group A pesticides, DDT, mercury, electrical conductivity, unknown toxicity and dissolved oxygen deficiencies. Elevated temperatures are increasingly acknowledged to be a limiting factor to critical life stages for a number of species.

Given the depleted fisheries and degraded state of South Delta waters, any permit regulating the discharge of pollutants must stringently comply with federal regulations, contain protective limits and not allow increases in concentration or mass loading of pollutants. Unfortunately, as we explain below, the Order falls woefully short in this regard.

## **II. The proposed permit does not comply with the CTR or SIP which prohibits compliance schedules for new or recommencing dischargers**

The proposed permit states in numerous locations that the Discharger has not previously discharged to surface waters and has previously discharged all wastewater to land for disposal. The proposed discharge is a new discharge. The proposed permit contains a compliance time schedule for Aldrin, bis(2-ethylhexyl)phthalate, cyanide and heptachlor in Limitations Section 2 in direct violation of the SIP. The proposed permit also contains a one-year compliance time schedule for bromoform, dibromochloromethane and dichlorobromomethane in Limitations Section d.

An existing but never used NPDES permit does not obviate the fact that the new treatment works and new outfall is a New Source or New Discharger subject to New Source requirements. The California Toxic Rule (CTR), page 31703 Federal Register/Vol 65, No. 97, states “[a] ‘new California discharger’ includes ‘any building, structure, facility, or installation from which there is, or may be, a discharge of pollutants’, the construction of which commences after the effective date of this regulations.” New California dischargers are “required to comply immediately upon commencement of discharge with effluent limitations derived from the criteria in this rule.” This is echoed by the federal regulations, 40 CFR § 122.47(a)(2), which state that a compliance schedule can be included for new dischargers “only when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised after commencement of construction but less than three years before commencement of the relevant discharge.” In the extant situation, the relevant standards were issued prior to construction and more than three years before commencement of discharge.

Alternatively, should the fallacious argument be presented that Mountain House’s current never-used NPDES permit somehow circumvents the new source rule, the dormancy of discharges from the facility means that Mountain House is a recommencing discharger. The California Toxic Rule (CTR), page 31704 Federal Register/Vol 65, No. 97, states “... a recommencing discharger shall install and implement all pollution control equipment to meet the conditions of the permit before discharging. The facility must also meet all permit conditions in the shortest feasible time (not to exceed 90 days).” Further, 40 CFR § 122.47(a)(2) allows compliance schedules for recommencing dischargers “only when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised less than three years before recommencement of discharge.” Here, relevant standards were issued more than three years before commencement of discharge.

The preceding paragraphs are further reinforced by the regulations, 40 CFR § 122.29(d)(4), which state “[t]he owner or operator of a new source, a new discharger, or a

recommencing discharger shall install and have in operating condition, and shall 'start up' all pollution control equipment to meet the conditions of its permits before beginning to discharge. Within the shortest feasible time (not to exceed 90 days), the owner or operation must meet all permit conditions."

The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) states "[c]ompliance schedules shall not be allowed in permits for new dischargers." SIP at 2.1, page 20. Since the Discharger has never legally discharged pollutants to the Old River, it is a new or, at the very least, a recommencing discharger.

We note that federal Regulations, 40 CFR § 122.4(i), even prohibit the issuance of a NPDES permit "[t]o a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violations of water quality standards." Indeed, the owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards must demonstrate before the close of the public comment period that; 1) there are sufficient remaining pollutant load allocations to allow for the discharge, and 2) the existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards. Id.

The Old River and the South Delta have never had to assimilate wastes discharged by Mountain House. Significant negative changes have transpired since the present permit was issued; i.e., crash of pelagic species, new listed species, new critical habitat designations, additional pollutant loading to the river, etc. Water quality standards and, consequently, limits in the Permit do not consider that aquatic species in receiving waters are subject to multiple stressors. It is both unreasonable and illegal to grant a facility that has never before discharged the same discharge and compliance schedule privileges accorded to an existing discharger that is presently in compliance with its permit but is faced with the need to expand and/or meet new criteria.

### **III. The proposed permit does not contain a protective or legal effluent limitation for EC, TDS or Chloride**

Federal Regulations, 40 CFR 122.44 (d)(i), requires that; "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." The Water Quality Control Plan (Basin Plan) for the Central Valley Region, Water Quality Objectives, page III-3.00, contains a Chemical Constituents Objective that includes Title 22 Drinking Water Maximum Contaminant Levels (MCLs) by reference. The Title 22 MCLs for EC are 900  $\mu\text{mhos/cm}$  (recommended level), 1,600  $\mu\text{mhos/cm}$  (upper level) and 2,200  $\mu\text{mhos/cm}$  (short term maximum). From the Fact sheet the wastewater discharge average EC level is 951  $\mu\text{mhos/cm}$  and the maximum observed EC was 1600  $\mu\text{mhos/cm}$ . Clearly the discharge exceeds the MCLs for EC presenting a reasonable

potential to exceed the water quality objective. The proposed permit contains an interim effluent limitation for EC of 1875  $\mu\text{mhos/cm}$ , as a monthly average. The proposed EC limitation clearly exceeds every stage MCL for EC. The proposed Order fails to establish an effluent limitation for EC that are protective of the Chemical Constituents water quality objective. The permit is confusing in that it states that there is also an interim EC goal of 1,000  $\mu\text{mhos/cm}$  although it would appear that the 1875  $\mu\text{mhos/cm}$  is applicable. In either case, the MCL is exceeded.

The Basin Plan states, on Page III-3.00 Chemical Constituents, “Waters shall not contain constituents in concentrations that adversely affect beneficial uses.” The Basin Plan’s “Policy for Application of Water Quality Objectives” provides that in implementing narrative water quality objectives, the Regional Board will consider numerical criteria and guidelines developed by other agencies and organizations. This application of the Basin Plan is consistent with Federal Regulations, 40CFR 122.44(d).

For EC, *Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, concluded that levels above 700  $\mu\text{mhos/cm}$  will reduce crop yield for sensitive plants. The University of California, Davis Campus, Agricultural Extension Service, published a paper, dated 7 January 1974, stating that there will not be problems to crops associated with salt if the EC remains below 750  $\mu\text{mhos/cm}$ . The 1995 Bay-Delta Plan contains salinity objectives for the South Delta in order to protect agricultural beneficial use of water in the southern Delta. The objectives provide for a maximum 30-day running average of mean daily electrical conductivity of 0.7 mmhos/cm from April through August and of 1.0 mmhos/cm from September through March of all water years. The objectives were developed following a study to determine the water quality needs of significant crops grown in the Delta. (State Board Revised Water Rights Decision 1641, 15 March 2000, p. 79). In February 2006, the State Board, following a six-day evidentiary hearing in October and November 2005, issued a Cease & Desist Order against the California Department of Water Resources and the U.S. Bureau of Reclamation for violations of the 0.7 mmhos/cm (700  $\mu\text{mhos/cm}$ ) objective for salinity in the southern Delta. The South Delta Water Agency presented extensive testimony by experts and Delta farmers regarding the effects from crop yield from irrigating with water above 700  $\mu\text{mhos/cm}$ .

Following multiple studies, the State Board adopted water quality control plans establishing salinity objectives for the Delta on three occasions (1978, 1991 and 1995). On 15 February 2006, the State Board issued a Cease & Desist Order against the California Department of Water Resources and the U.S. Bureau of Reclamation for potential violations of the objective. Inexplicably, the Regional Board still hasn’t gotten the message. The proposed Permit allows a new discharge containing EC concentrations far above the long-established water quality standards for the Delta.

The Discharger’s wastewater effluent will increase concentrations of EC to unacceptable levels adversely affecting the agricultural beneficial use. The wastewater discharge not only presents a reasonable potential, but also actually causes, violation of the Chemical

Constituent Water Quality Objective in the Basin Plan. The permit clearly states that there is no assimilative capacity for EC within the receiving stream. The available literature regarding safe levels of EC for irrigated agriculture mandate that an Effluent Limitation for EC is necessary to protect the beneficial use of the receiving stream in accordance with the Basin Plan and Federal Regulations. Failure to establish effluent limitations for EC that are protective of the Chemical Constituents water quality objective blatantly violates the law.

Federal Regulation, 40 CFR 122.44, which mandates an effluent limitation be established if a discharge exceeds a water quality objective. The discharge of EC clearly exceeds the drinking water MCLs that are incorporated into the Basin Plan by reference. The proposed permit cites a State Board Order for Manteca, (Water Quality Order 2005-005) which states, “...*the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City’s municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects.*” Neither the Regional nor State Board has the authority to ignore Federal Regulations. Bay Area treatment plants have been utilized for RO brine disposal previously. Based on the drinking water supply average EC concentration of 373  $\mu\text{mhos/cm}$  the municipal wastewater could be very close to compliance with EC and TDS limitations without RO treatment and discussion of the Manteca Order is therefore not applicable.

The special studies section of the proposed permit states that: “To comply with Resolution 68-16, the treatment or control of discharges of waste to waters of the state must be sufficient to provide the minimum degradation of such waters that is feasible, but in no case can the discharge cause the exceedance of applicable water quality objectives.” Clearly the proposed permit, which allows exceedance of water quality objectives, fails to comply with the Antidegradation Policy (Resolution 68-16).

The above discussion for EC applies for TDS and chloride where it is clearly shown that the proposed permit allows exceedance of the MCLs and the agricultural water quality goals. The Order must be revised to include protective and legally defensible limitations for EC, TDS and chloride.

#### **IV. The Reasonable Potential Analyses for CTR constituents fail to comport with federal requirements and must be recalculated**

Federal regulations, 40 CFR § 122.44(d)(1)(ii), state “when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole

effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.” Emphasis added.

Fact Sheet, Table F-2 page F-21: The reasonable potential analyses for CTR constituents fail to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations. For example, a multiplier of 1 was used for CTR constituents instead of the required multiplier factors necessary to properly evaluate reasonable potential. The procedures for computing variability are detailed in Chapter 3, pages 52-55, of USEPA’s *Technical Support Document For Water Quality-based Toxics Control*.

For example, the Fact Sheet, page 53 reveals that the Maximum Effluent Concentration (MEC) for copper is  $6.8 \mu\text{g/L}$ , the number of copper samples is 13 and the coefficient of variation (CV) is 0.6. Table 3.1, page 54, in the Technical Support Document demonstrates that the proper multiplier for 13 samples with a CV of 0.6 is 2.7; not the 1.0 used in the Permit’s reasonable potential analysis. Multiplying the MEC of  $6.8 \mu\text{g/L}$  of copper by the proper multiplier of 2.7 gives a Projected MEC for copper of  $18.36 \mu\text{g/L}$ . The acute aquatic life criteria (CMC) of copper (adjusted for hardness) is  $14.6 \mu\text{g/L}$  and the chronic criteria (CCC) is  $9.6 \mu\text{g/L}$ . Since the projected MEC for copper is over both the CMC and CCC, the discharge has a reasonable potential to exceed the applicable water quality standards and a limitation for copper must be included in the Permit. The permit writer used the proper procedures for non-CTR constituents; i.e., aluminum, antimony, barium, chloride, sulfate, etc. However, the reasonable potential analyses for CTR constituents are flawed and must be recalculated for arsenic, bis(2-ethylhexyl)phthalate, chromium, copper, cyanide, iron, lead, mercury, nickel, selenium, tributyltin and zinc.

The fact that the SIP illegally ignores this fundamental requirement does not exempt the Regional Board from its obligation to consider statistical variability in compliance with federal regulations. This is especially true for a Permit regulating a discharge of pollutants into a highly degraded area of the estuary that has no available dilution and that is experiencing massive crashes of its pelagic fisheries.

#### **V. The antidegradation analysis is woefully inadequate and inconsistent with federal and state antidegradation policy**

The antidegradation analysis in the proposed Permit is not simply deficient, it is literally nonexistent. The brief discussion of antidegradation requirements, in the Findings and Fact Sheet, consist only of skeletal, unsupported, undocumented conclusory statements totally lacking in factual analysis. The failure to undertake a rigorous antidegradation analysis for a new “major” discharge of pollutants into a severely degraded and legally impaired waterbody whose fisheries are experiencing catastrophic collapse due, in part, to poor water quality is appalling. Regional Board staff is apparently unaware of state and federal policies regarding antidegradation analyses or they have been directed to ignore them.

Section 101(a) of the Clean Water Act, the basis for the antidegradation policy, states that the objective of the Act is to “restore and maintain the chemical, biological and physical integrity of the nation’s waters.” Section 303(d)(4) of the Act carries this further, referring explicitly to the need for states to satisfy the antidegradation regulations at 40 CFR § 131.12 before taking action to lower water quality. These regulations describe the federal antidegradation policy and dictate that states must adopt both a policy at least as stringent as the federal policy as well as implementing procedures. (40 CFR § 131.12(a).)

California’s antidegradation policy is composed of both the federal antidegradation policy and the State Board’s Resolution 68-16. (State Water Resources Control Board, Water Quality Order 86-17, p. 20 (1986) (“Order 86-17”); Memorandum from William Attwater, SWRCB to Regional Board Executive Officers, “federal Antidegradation Policy,” pp. 2, 18 (Oct. 7, 1987) (“State Antidegradation Guidance”).) As part of the state policy for water quality control, the antidegradation policy is binding on all of the Regional Boards. (Water Quality Order 86-17, pp. 17-18.) Implementation of the state’s antidegradation policy is guided by the State Antidegradation Guidance, SWRCB Administrative Procedures Update 90-004, 2 July 1990 (“APU 90-004”) and USEPA Region IX, “Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12” (3 June 1987) (“Region IX Guidance”), as well as Water Quality Order 86-17.

The Regional Board must apply the antidegradation policy whenever it takes an action that will lower water quality. (State Antidegradation Guidance, pp. 3, 5, 18, and Region IX Guidance, p. 1.) Application of the policy does not depend on whether the action will actually impair beneficial uses. (State Antidegradation Guidance, p. 6. Actions that trigger use of the antidegradation policy include issuance, re-issuance, and modification of NPDES and Section 404 permits and waste discharge requirements, waiver of waste discharge requirements, issuance of variances, relocation of discharges, issuance of cleanup and abatement orders, increases in discharges due to industrial production and/or municipal growth and/or other sources, exceptions from otherwise applicable water quality objectives, etc. (State Antidegradation Guidance, pp. 7-10, Region IX Guidance, pp. 2-3.) Both the state and federal policies apply to point and nonpoint source pollution. (State Antidegradation Guidance p. 6, Region IX Guidance, p. 4.)

The federal antidegradation regulations delineate three tiers of protection for waterbodies. Tier 1, described in 40 CFR § 131.12(a)(1), is the floor for protection of all waters of the United States. (48 Fed. Reg. 51400, 51403 (8 Nov. 1983); Region IX Guidance, pp. 1-2; APU 90-004, pp. 11-12.) It states that “[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.” Uses are “existing” if they were actually attained in the water body on or after November 28, 1975, or if the water quality is suitable to allow the use to occur, regardless of whether the use was actually designated. (40 CFR § 131.3(e).) Tier 1 protections apply even to those waters already impacted by pollution and identified as impaired. In other words, already impaired waters cannot be further impaired.

Tier 2 waters are provided additional protections against unnecessary degradation in places where the levels of water quality are better than necessary to support existing uses. Tier 2 protections strictly prohibit degradation unless the state finds that a degrading activity is: 1) necessary to accommodate important economic or social development in the area, 2) water quality is adequate to protect and maintain existing beneficial uses, and 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved. (40 CFR § 131.12(a)(2).) Cost savings to a discharger alone, absent a demonstration by the project proponent as to how these savings are “necessary to accommodate important economic or social development in the area,” are not adequate justification for allowing reductions in water quality. (Water Quality Order 86-17, p. 22; State Antidegradation Guidance, p. 13.) If the waterbody passes this test and the degradation is allowed, degradation must not impair existing uses of the waterbody. (48 Fed. Reg. at 51403). Virtually all waterbodies in California may be Tier 2 waters since the state, like most states, applies the antidegradation policy on a parameter-by-parameter basis, rather than on a waterbody basis. (APU 90-004, p. 4). Consequently, a request to discharge a particular chemical to a river, whose level of that chemical was better than the state standards, would trigger a Tier 2 antidegradation review even if the river was already impaired by other chemicals.

Tier 3 of the federal antidegradation policy states “[w]here high quality waters constitute an outstanding national resource, such as waters of national and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water shall be maintained and protected. (40 CFR § 131.12(a)(3).) These Outstanding National Resource Waters (ONRW) are designated either because of their high quality or because they are important for another reason. (48 Fed. Reg. At 51403; State Antidegradation Guidance, p. 15). No degradation of water quality is allowed in these waters other than short-term, temporary changes. (Id.) Accordingly, no new or increased discharges are allowed in either ONRW or tributaries to ONRW that would result in lower water quality in the ONRW. (EPA Handbook, p. 4-10; State Antidegradation Guidance, p. 15.) Existing antidegradation policy already dictates that if a waterbody “should be” an ONRW, or “if it can be argued that the waterbody in question deserves the same treatment {as a formally designated ONRW},” then it must be treated as such, regardless of formal designation. (State Antidegradation Guidance, pp. 15-16; APU 90-004, p. 4.) Thus the Regional Board is required in each antidegradation analysis to consider whether the waterbody at issue should be treated as an ONRW. It should be reiterated that waters cannot be excluded from consideration as an ONRW simply because they are already “impaired” by some constituents. By definition, waters may be “outstanding” not only because of pristine quality, but also because of recreational significance, ecological significance or other reasons. (40 CFR §131.12(a)(3).) Waters need not be “high quality” for every parameter to be an ONRW. (APU 90-004, p. 4) For example, Lake Tahoe is on the 303(d) list due to sediments/siltation and nutrients, and Mono Lake is listed for salinity/TDC/chlorides but both are listed as ONRW.

The State Board’s APU 90-004 specifies guidance to the Regional Boards for implementing the state and federal antidegradation policies and guidance. The guidance establishes a two-tiered process for addressing these policies and sets forth two levels of

analysis: a simple analysis and a complete analysis. A simple analysis may be employed where a Regional Board determines that: 1) a reduction in water quality will be spatially localized or limited with respect to the waterbody, e.g. confined to the mixing zone; 2) a reduction in water quality is temporally limited; 3) a proposed action will produce minor effects which will not result in a significant reduction of water quality; and 4) a proposed activity has been approved in a General Plan and has been adequately subjected to the environmental and economic analysis required in an EIR. A complete antidegradation analysis is required if discharges would result in: 1) a substantial increase in mass emissions of a constituent; or 2) significant mortality, growth impairment, or reproductive impairment of resident species. Regional Boards are advised to apply stricter scrutiny to non-threshold constituents, i.e., carcinogens and other constituents that are deemed to present a risk of source magnitude at all non-zero concentrations. If a Regional Board cannot find that the above determinations can be reached, a complete analysis is required.

Even a minimal antidegradation analysis would require an examination of: 1) existing applicable water quality standards; 2) ambient conditions in receiving waters compared to standards; 3) incremental changes in constituent loading, both concentration and mass; 4) treatability; 5) best practicable treatment and control (BPTC); 6) comparison of the proposed increased loadings relative to other sources; 7) an assessment of the significance of changes in ambient water quality and 8) whether the waterbody was a ONRW. A minimal antidegradation analysis must also analyze whether: 1) such degradation is consistent with the maximum benefit to the people of the state; 2) the activity is necessary to accommodate important economic or social development in the area; 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved; and 4) resulting water quality is adequate to protect and maintain existing beneficial uses. A BPTC technology analysis must be done on an individual constituents basis; while tertiary treatment may provide BPTC for pathogens, dissolved metals may simply pass through.

The proposed Permit acknowledges that the wastewater treatment plant does not currently discharge to surface water. The wastewater treatment plant is for a new community. The discharge is a new discharge to surface waters. The mass and concentration of all of the pollutants discussed in the proposed permit will increase with this new discharge, none of which are discussed with regard to the Board's antidegradation policy.

The initial expansion will allow a surface water discharge of pollutants. A second expansion of the wastewater treatment plant is also discussed in the Order, but not with regard to antidegradation. The antidegradation discussion in the proposed permit states that: 1) The surface water discharge may allow some degradation of water quality; 2) compliance with these requirements will result in the use of best practicable treatment or control of the discharge; 3) the receiving water may exceed applicable water quality objectives for certain constituents as described in this Order and 4) the Order requires the Discharger, in accordance with specified compliance schedules, to meet requirements that will result in the use of best practicable treatment or control of the discharge and will

result in compliance with water quality objectives. All of these statements are conclusory and without basis in fact.

As previously observed, each the pollutants discharged represent significant increases in the mass of pollutants discharged that are not specifically discussed in the analysis. The antidegradation analysis fails to adequately discuss the significant increase in oxygen demanding substances or available best practicable treatment or control of the discharge of these substances. The Permit establishes that receiving waters are impaired for dissolved oxygen. BOD, nitrogen and phosphorus are the primary contributors to eutrophication and increased mass loading of these constituents will cause a further oxygen demand on an already impaired waterbody. The increased loadings of oxygen demanding substances will significantly contribute to violation of the water quality objective for dissolved oxygen.

The Tentative Permit allows an expansion of the wastewater treatment plant. However the Discharger is not required be in compliance with the effluent limitations for electrical conductivity (EC). The antidegradation analysis does not discuss why an increased flow is allowed until the Discharger confirms that an expanded wastewater system can comply with all effluent and receiving water limitations. Allowing an interim expansion without requiring complete compliance is contrary to the statement in the antidegradation analysis that the flow increase will not cause a violation of water quality objectives. The antidegradation analysis fails to discuss why the wastewater treatment plant is allowed any expansion that does not result in full permit and immediate compliance prior to allowing a new discharge.

With respect to salinity, the proposed Order establishes an interim effluent limit of 1875  $\mu\text{mhos/cm}$  as electrical conductivity (EC) based on the Discharger's current level of performance. The antidegradation language in the proposed permit states that considerable dilution is available prior to any downstream municipal supply intakes. These statements directly conflict with the Attachment F, page 47, in the EC discussion, which states: "These data show that the receiving water frequently has no assimilative capacity for EC." The proposed Order further states that the: "...interim effluent limit is essentially the same as the secondary maximum contaminant level (MCL) for protection of municipal and domestic supply." The permit mentions the actual MCLs for EC are 900  $\mu\text{mhos/cm}$  as the primary water quality goal, 1,600  $\mu\text{mhos/cm}$  as a short-term level and 2,200  $\mu\text{mhos/cm}$  as a short term maximum. Contrary to federal regulations, the permit does not apply the MCLs protecting the drinking water beneficial use of the receiving stream.

The Permit's antidegradation conclusions state "[t]his Order requires the Discharger to (1) evaluate and propose an appropriate numeric effluent limit to protect the beneficial use agricultural supply in the area of the discharge that will implement the Basin Plan's narrative chemical constituent objective, and (2) to evaluate and implement BPTC of salinity in the discharge, including source control. This Order will be reopened to include an effluent limit that is protective for salinity that is protective of the beneficial use of agricultural supply and will require implementation of BPTC." (Fact Sheet, p. 11). In

reality, the BPTC study will be completed at some uncertain time in the future. The EC study to protect agricultural uses is to be completed by August 2010; the Pollution Prevention Plan for salinity is required to be submitted sometime after July 2009. In the interval, the Discharger is allowed to discharge almost 2.7 times the 700  $\mu\text{mhos/cm}$  EC concentration that the Regional Board has routinely used to protect agricultural beneficial uses. Outrageously, the Regional Board is blatantly ignoring the salinity standards included in the 1978, 1991 and 1995 Water Quality Control Plans for the Delta issued by the State Board. The State Board recently completed evidentiary hearings and issued a Cease & Desist Order against the California Department of Water Resources and U.S. Bureau of Reclamation for violations of that 1995 700- $\mu\text{mhos/cm}$  agricultural water quality standard. The record of that hearing conclusively establishes that sensitive crops suffer when irrigated with water that exceeds the 700  $\mu\text{mhos/cm}$  standard. The suggestion that, after the Discharger completes another study, the Order can be reopened to consider protective limitations does not, in any fashion, resemble an acceptable antidegradation analysis.

The Permit's entire antidegradation analysis for temperature simply states "[w]ith respect to temperature, the Discharger must comply with a time schedule to reduce the effluent temperature to meet the Basin Plan standards or to comply with an exemption granted under the Thermal Plan. (Fact Sheet, p. 11). Actually, the Discharger is only required to submit a study, within six months of the discharge exceeding 1.25 mgd as a monthly average (at some unknown time in the future), to enable the Regional Board to determine reasonable potential. Only then, is the Discharger required to submit a corrective action plan and proposed time schedule. Presumably, the Board will then either issue limitations or move to exempt the Discharger from Thermal Plan requirements. Regardless, there is no antidegradation analysis for temperature in the Permit.

The Permit allows a large increase in mercury loading. Mercury is a bioaccumulative pollutant that is highly toxic to fish, wildlife and humans. However, the antidegradation analysis is silent in regards to mercury and the effects of increased mass loading of mercury on the environment.

The Permit's antidegradation analysis contains five conclusory sentences with respect to salinity and one conclusory sentence regarding temperature. It ignores the other discharged pollutants altogether, including constituents identified as impairing receiving waters, i.e., mercury, toxicity, pesticides, etc. The proposed permit allows a *new* discharge that causes and contributes to a violation of water quality objectives; specifically Basin Plan Objectives for chemical constituents irrigated agricultural goals, temperature and dissolved oxygen. These violations unreasonably affect beneficial uses: specifically aquatic life, irrigated agriculture and municipal and domestic supply. And, the entire antidegradation analysis consists of three paragraphs of unsupported conclusions. Compare this to the simple antidegradation analyses of Region 8's 2002 Reclaimed Water Projects Antidegradation Guidance (44 pages) and Region 2's 2002 Napa Sanitation District Water Recycling Facility (23 pages).

Old River and the Delta estuary are Outstanding National Resource Waters deserving Tier 3 protection. As we discussed above, waters cannot be excluded from consideration as an ONRW simply because they are already “impaired” by some constituents. By definition, waters may be “outstanding” not only because of pristine quality, but also because of recreational significance, ecological significance or other reasons. (40 CFR §131.12(a)(3). Old River and Delta waterways are home to a number of species listed on state and federal endangered species lists (see “I” above). These waterways are the only place on earth home to Delta smelt; a state and federally listed species hovering on the brink of extirpation. It is the central migration corridor for all salmonids in the Central Valley. The Delta is an ecological cornucopia, a crucial way stop on the Pacific flyway and one of the most heavily used recreational areas in the state. Delta waters furnish all or part of the water supply for two-thirds of the state’s population. By any reasonable standard, the Delta qualifies as an ONRW, despite its impairment by a number of pollutants. Inexplicably, the Permit failed to take even the first step of an acceptable antidegradation analysis by determining which “Tier” was appropriate; let alone complying with the explicit requirements listed above. Regardless, as an ONRW, no new or increased discharges are legally permitted.

Alternatively, Old River and the Delta are clearly Tier 2 waterways, as antidegradation is determined on a parameter-by-parameter basis. Any antidegradation analysis must comport with implementation requirements in State Board Water Quality Order 86-17, State Antidegradation Guidance, APU 90-004 and Region IX Guidance. The conclusory, unsupported, undocumented statements in the Permit are no substitute for a defensible antidegradation analysis.

The antidegradation review process is especially important in the context of waters protected by Tier 2. See EPA, Office of Water Quality Regulations and Standards, Water Quality Standards Handbook, 2nd ed. Chapter 4 (2nd ed. Aug. 1994). Whenever a person proposes an activity that may degrade a water protected by Tier 2, the antidegradation regulation requires a state to: (1) determine whether the degradation is “necessary to accommodate important economic or social development in the area in which the waters are located”; (2) consider less-degrading alternatives; (3) ensure that the best available pollution control measures are used to limit degradation; and (4) guarantee that, if water quality is lowered, existing uses will be fully protected. 40 CFR § 131.12(a)(2); EPA, Office of Water Quality Regulations and Standards, Water Quality Standards Handbook, 2nd ed. 4-1, 4-7 (2nd ed. Aug. 1994). These activity-specific determinations necessarily require that each activity be considered individually.

For example, the APU 90-004 states:

“Factors that should be considered when determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit include: a) past, present, and probably beneficial uses of the water, b) economic and social costs, tangible and intangible, of the proposed discharge compared to benefits. The economic impacts to be considered are those incurred in order to

maintain existing water quality. The financial impact analysis should focus on the ability of the facility to pay for the necessary treatment. The ability to pay depends on the facility's source of funds. In addition to demonstrating a financial impact on the publicly – or privately – owned facility, the analysis must show a significant adverse impact on the community. The long-term and short-term socioeconomic impacts of maintaining existing water quality must be considered. Examples of social and economic parameters that could be affected are employment, housing, community services, income, tax revenues and land value. To accurately assess the impact of the proposed project, the projected baseline socioeconomic profile of the affected community without the project should be compared to the projected profile with the project...EPA's Water Quality Standards Handbook (Chapter 5) provides additional guidance in assessing financial and socioeconomic impacts"

There is nothing resembling an economic or socioeconomic analysis in the Permit. There are viable alternatives that have never been analyzed. The Discharger could continue with land disposal or install micro-filtration treatment equipment. The evaluation contains no comparative costs. As a rule-of-thumb, USEPA recommends that the cost of compliance should not be considered excessive until it consumes more than 2% of disposable household income in the region. This threshold is meant to suggest more of a floor than a ceiling when evaluating economic impact. In the Water Quality Standards Handbook, USEPA interprets the phrase "necessary to accommodate important economic or social development" with the phrase "substantial and widespread economic and social impact."

There is no "affordable housing" at Mountain House. We suspect that 2% of household income might be equivalent to wastewater fees of \$100-200 dollars a month. The antidegradation analysis must discuss the relative economic burden as an aggregate impact across the entire region using macroeconomics. Considering the intrinsic value of the Delta to the entire state and the potential effects upon those who rely and use Delta waters, it must also evaluate the economic and social impacts to water supply, recreation, fisheries, etc. from the Discharger's degradation of water quality in the Delta. Indeed, it is questionable whether Mountain House is an economic asset at all. As a residential community (the commercial and industrial components are stillborn) lacking major employment, it places a financial burden on San Joaquin County. Situated along an expressway that is already LOS F, it increases the gridlock that drains the pocketbook of every commuter. Nor has the case been made that there is no alternative for necessary housing other than placing it where its wastewater must discharge directly into sensitive but seriously degraded waters. The project proponents have simply concluded that it is cheaper to degraded Old River and the Delta than to continue land disposal (or build elsewhere). Its unfortunate that the agency charged with implementing the Clean Water Act has apparently decided it is more important to protect the polluter than the environment.

There is nothing in the Permit resembling an alternatives analysis evaluating less damaging and degrading alternatives. Surely, the Discharger provided some information as to why it chooses to abandon its present discharge-to-land scheme. Unfortunately, the Permit fails to evaluate and discuss why there is no alternative other than discharging to surface waters. Other communities have successfully disposed of wastes without discharging additional pollutants to degraded rivers. The discharger certainly has the option of purchasing offsets. A proper alternatives analysis would cost out various alternatives and compare each of the alternatives' impacts on beneficial uses.

There is nothing resembling an analysis buttressing the unsupported claim that BPTC is required. An increasing number of wastewater treatment plants around the country and state are employing reverse-osmosis (RO), or even RO-plus. Clearly, micro-filtration can be considered BPTC for wastewater discharges of impairing pollutants into critically sensitive ecological areas containing listed species that are already suffering serious degradation. If this is not the case, the antidegradation analysis must explicitly detail how and why run-of-the-mill tertiary system that facilitate increased mass loadings of impairing constituents can be considered BPTC.

There is nothing in the Permit resembling an analysis that ensures that existing beneficial uses are protected. While the Permit identifies the constituents that are included on the 303(d) list as impairing receiving waters, it fails to discuss how and to what degree the identified beneficial uses will be additionally impacted by the discharge. Nor does the Permit analyze the incremental and cumulative impact of increased loading of non-impairing pollutants on beneficial uses. In fact, there is almost no information or discussion on the composition and health of the identified beneficial uses. Any reasonably adequate antidegradation analysis must discuss the affected beneficial uses (i.e., numbers and health of the aquatic ecosystem; extent, composition and viability of agricultural production; people depending upon these waters for water supply; extent of recreational activity; etc.) and the probable effect the discharge will have on these uses.

Alternatively, Tier 1 requires that existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. Tier 1 is the absolute floor of water quality in all waters of the United States. No activity is allowable under the antidegradation policy that would partially or completely eliminate any existing use. Species that are in the waterbody must be fully protected; i.e., water quality cannot result in mortality or significant growth or reproductive impairment. Any lowering of water quality below this full level of protection is simply not allowed. See EPA, Office of Water Quality Regulations and Standards, Questions and Answers on: Antidegradation, p. 4, Appendix G, Water Quality Standards Handbook, 2nd ed. Chapter 4 (2nd ed. Aug. 1994). By definition, any increase in the discharge of impairing pollutants to impaired waterways unreasonably degrades beneficial uses and exceeds applicable water quality standards. Prohibition of additional mass loading of impairing pollutants is a necessary stabilization precursor to any successful effort in bringing an impaired waterbody into compliance.

The State Board has clearly articulated its position on increased mass loading of impairing pollutants. In Order WQ 90-05, the Board directed the San Francisco Regional Board on the appropriate method for establishing mass-based limits that comply with state and federal antidegradation policies. That 1990 order stated “[I]n order to comply with the federal antidegradation policy, the mass loading limits should also be revised, based on mean loading, concurrently with the adoption of revised effluent limits. The [mass] limits should be calculated by multiplying the [previous year’s] annual mean effluent concentration by the [four previous year’s] annual average flow. (Order WQ 90-05, p. 78). USEPA points out, in its 12 November 1999 objection letter to the San Francisco Regional Board concerning Tosco’s Avon refinery, that ‘[a]ny increase in loading of a pollutant to a water body that is impaired because of that pollutant would presumably degrade water quality in violation of the applicable antidegradation policy.’”

Any defensible antidegradation analysis must include a cumulative assessment of assimilative capacity. Determinations of reasonable potential and assimilative capacity are based upon historical monitoring data. Consequently, there is a danger of over-allocating the remaining assimilative capacity in the watershed. For example, the State Board’s over appropriation of streamflow throughout the state should serve as a cautionary lesson. An legally acceptable antidegradation analysis must include: 1) a cumulative assessment of remaining assimilative capacity in the basin; 2) an evaluation of assimilative capacity that has already been allocated in NPDES permits in the basin but not yet utilized; and 3) consideration of how much assimilative capacity should be reserved for future growth.

Conclusions regarding available assimilative capacity must wait until a basin-wide assessment can be conducted. Unlike the Water Code, the Clean Water Act requires mandatory adjudications – otherwise known as TMDLs. Any grant of assimilative capacity potentially affects every discharger in the Delta and its tributaries.

Any project that allows a single new community to artificially minimize waste management costs by externalizing the disposal of wastes to already degraded waterways that are part of the common property right of all 36 million Californians has not met the test of “maximum benefit of the people of the State” and cannot be consistent with state and federal antidegradation policies. The proposed increase in pollutant mass loading will inescapably and detrimentally affect aquatic life, contribute to violations of water quality standards and increase the risks and costs to the millions of people who depend upon the Delta for their drinking/irrigation/recreation water. Any increase housing and/or economic expansion facilitated by the proposed Permit will be at the expense of other communities that will incur the consequences of larger load reductions when TMDL load allocations are instituted.

NPDES permits must include any more stringent effluent limitation necessary to implement the Regional Board Basin Plan (Water Code 13377). The Tentative Permit fails to properly implement the Basin Plan’s Antidegradation Policy. The discharge must be capable of achieving 100% compliance with Effluent and Receiving Water Limitations prior to allowing the new discharge.

## **VI. The limitation for acute toxicity is inconsistent with Basin Plan and federal requirements**

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This section of the Basin Plan further states, in part that, compliance with this objective will be determined by analysis of indicator organisms.

The Tentative Permit requires that the Discharger conduct acute toxicity tests and states that compliance with the toxicity objective will be determined by analysis of indicator organisms. However, the Tentative Permit contains a discharge limitation that allows 30% mortality (70% survival) of fish species in any given toxicity test.

The Tentative Permit acknowledges in detail that there is no assimilative capacity in the receiving stream for individual toxic pollutants. It further acknowledges that ambient waters are impaired for unknown toxicity. Allowing 30% mortality in acute toxicity tests allows that same level of mortality in the receiving stream, in violation of federal regulations and contributes to exceedance of the Basin Plan's narrative water quality objective for toxicity. Accordingly, the Order should be revised to prohibit acute toxicity.

## **VII. The Order fails to contain an effluent limitation for chronic toxicity**

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including state narrative criteria for water quality. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

The Tentative Permit states that: "...to ensure compliance with the Basin Plan's narrative toxicity objective, the discharger is required to conduct whole effluent toxicity testing...". However, sampling does not equate with or ensure compliance.

The Tentative Permit requires the Discharger to conduct an investigation of the possible sources of toxicity if a threshold is exceeded. This language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third

parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An effluent limitation for chronic toxicity must be included in the Order.

In addition, the Chronic Toxicity Testing Dilution Series should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge.

### **VIII. The Order violates state and federal endangered species acts**

As discussed above, South Delta waterways are listed on the 303(d) list as impaired because of unknown toxicity and are home to species protected by state and federal endangered species acts. There is no remaining assimilative capacity for toxicity, toxic pollutants or oxygen demanding constituents. Astonishingly, the Tentative Permit allows acute toxicity, fails to limit chronic toxicity and, as we discuss below, includes effluent limits that are not protective of listed species. The Tentative Permit is likely to result in the illegal “take” of listed species and will likely result in the destruction or adverse modification of critical habitat in violation of Section 9 of the federal Endangered Species Act (ESA).

The Order has been developed with federal funds and is issued pursuant to U.S. Environmental Protection Agency (EPA) authorization. Consequently, the Regional Board and/or EPA must enter into formal consultation with both the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the ESA. The discharge of toxicity and toxic pollutants by the Discharger is a violation of Section 9 of the ESA and requires an incidental take permit pursuant to Section 10 of the ESA. The Regional Board’s issuance of an Order that authorizes and/or “causes” an illegal “take” is also a violation of Section 9 of the ESA. Consequently, both the Discharger and the Regional Board must secure incidental take permits from NMFS and USFWS.

The Tentative Permit will also likely result in an illegal “take” of listed species pursuant to Section 2080 of the California Fish and Game Code; i.e., the California Endangered Species Act (CESA). The Discharger must obtain a permit under Section 2081 or a consistency determination under Section 2080.1 of CESA. Unlike ESA, CESA requires that authorized take be “fully mitigated” and that all required measures be “capable of successful implementation.” Since there are no provisions for time schedules under CESA, the Discharger must comply with protective limits as soon as possible and certainly prior to any increase in the rate of discharge. The inadequate toxicity, temperature, ammonia, and dissolved oxygen limits in the Tentative Permit should be revised to be fully protective of listed species. The Discharger and Regional Board must initiate consultation with the California Department of Fish and Game.

### **IX. Temperature limitations violate the Basin Plan, Thermal Plan and federal regulations**

The Tentative Permit contains an Effluent Limitation that states: “The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.” It also includes a Receiving Water Limitation that states that the discharge shall not cause: “The creation of a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of the river channel at any point or a surface temperature rise greater than 4°F above the natural temperature of the receiving water at any time or place.” Unless the Order is allowing a mixing zone, compliance with the proposed effluent limitation would cause immediate violation of the Receiving Water Limitations. The receiving water limitations are apparently based on Basin Plan water quality objectives, whereas the Effluent Limitation appears to have no technical or legal explanation. Federal Regulations, 40 CFR 122.44(d)(1)(i), requires an effluent limitation be adopted whenever a pollutant discharge has a reasonable potential to exceed a water quality standard or objective. Given the channel configuration, a discharge at 20°F above the natural receiving water temperature will clearly cause exceedance of a 4°F Receiving Water objective. The Effluent Limitation allowing a 20°F increase in temperature above receiving water temperatures violates federal regulations and must be removed and replaced with a protective limit.

The proposed permit language does not accurately reflect the Basin Plan and Thermal Plan objective for temperature, violates 40 CFR 122.44(d)(1)(i) and must be changed.

#### **X. Monitoring requirements are inadequate**

Federal regulations, 40 CFR §§ 122.44(i) and 122.48, require NPDES permits to include requirements to monitor sufficient to assure compliance with permit limitations and requirements, the mass or other measurement specified in the permit for each pollutant limited in the permit, and the volume of effluent discharged from each outfall. NPDES permits are required to include monitoring specifying the type, the interval, and the frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring.

The frequency of monitoring is insufficient to assure compliance with Permit limitations. For example, monthly monitoring of a 24-hour composite sample represents approximately 3.3% of the flow being discharged. Monthly grab samples represent less than 0.0068% of the flow. The primary basis for metals limitations is principally the protection of aquatic life, to prevent toxicity. Review of monitoring data shows that problematic metals concentrations are typically pulses reflected as spikes. Monitoring 0.0068 to 3.3% of the waste stream is clearly insufficient to assure compliance with the permit discharge limitations and to prevent toxicity.

The reasonable potential analysis has shown that there are numerous non-compliant constituents. These constituents are being discharged above water quality standards, obviously causing a problem to water quality. For many of these constituents, the sampling frequency is monthly, or even quarterly. The basis for most water quality criteria states that constituents that exceed criteria more frequently than once every three

years have a devastating impact on the receiving stream. Sampling for constituents on a monthly or quarterly basis is insufficient to determine the true impacts to the receiving stream. Ammonia, like chlorine, is an extremely toxic substance. The nitrification process to remove ammonia can have periods of instability. The Regional Board's proposed sampling frequency is inadequate to determine whether the treatment system is operated continuously in a nitrification mode.

Constituents limited in permits should be monitored continuously, where appropriate, or weekly. Standard minerals and priority pollutants should be sampled quarterly. Acute toxicity tests should be conducted weekly and, given the sensitivity and degraded state of receiving waters, chronic toxicity tests should be conducted monthly, at a minimum.

Grab samples for metals and semi volatile constituents are inappropriate for effluent monitoring. Flow proportional 24-hour composite sampling for metals and semi-volatile constituents is necessary. The Order currently requires monthly grab samples for EC. Continuous EC monitoring is especially critical to determine the critical values related to the numerous EC discussions and studies in the proposed Order.

The Monitoring and Reporting Program requires collection and analysis of total mercury. It must also require that methylmercury samples be collected and analyzed. Since sulfate concentrations affect methylation rates, sulfate should be analyzed concurrently with total and methyl mercury. Monthly methylmercury and sulfate sampling should also be required for receiving water monitoring.

#### **XI. The Permit fails to adequately discuss CEQA**

The permit states that the action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of Division 13 of the Public Resources Code in accordance with Section 13389 of the CWC. The action to adopt an NPDES permit may be exempt from CEQA; however the proposed permit discusses a new discharge of wastes to surface water and a significant expansion of the wastewater treatment plant, which is not exempt from CEQA. The permit discusses a CEQA document that was completed for the wastewater treatment plant expansion. The CEQA discussion within the permit must be expanded to discuss all of the water quality impacts discovered during the CEQA analysis.

#### **XII. A significant number of the Effluent Limitations are not limited for mass**

As is stated in the Fact sheet, mass limitations are required by federal regulations, 40 CFR 122.45(f). 40 CFR §122.45(f) states that: *"All pollutants limited in permits shall have limitations...expressed in terms of mass except...[f] or pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass...Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."* The Fact sheet then states that all constituents are limited for mass. However, most of the effluent limitations do not have associated mass limitations.

U.S. EPA's Technical Support Document for Water Quality-Based Toxics Control (TSD), states in section 5.7.1, pp. 110-111 that:

“Mass-based effluent limits are required by NPDES regulations at 40 CFR 122.45(f). The regulation requires that all pollutants limited in NPDES permits have limits, standards, or prohibitions expressed in terms of mass with three exceptions, including one for pollutants that cannot be expressed appropriately as mass. Examples of such pollutants are pH, temperature, radiation, and whole effluent toxicity. Mass limitations in terms of pounds per day or kilograms per day can be calculated for all chemical-specific toxics such as chlorine or chromium. Mass-based limits should be calculated using concentration limits at critical flows. For example, a permit limit of 10 mg/l of cadmium discharged at an average rate of 1 million gallons per day also would contain a limit of 38 kilograms/day of cadmium.

Mass-based limits are particularly important for control of bioconcentratable pollutants. Concentration-based limits will not adequately control discharges of these pollutants if the effluent concentrations are below detection levels. For these pollutants, controlling mass loadings to the receiving water is critical for preventing adverse environmental impacts.

However, mass-based effluent limits alone may not assure attainment of water quality standards in waters with low-dilution. In these waters, the quantity of effluent discharged has a strong effect on the instream dilution and therefore on the RWC [receiving water concentration]. At the extreme case of a stream that is 100 percent effluent, it is the effluent concentration rather than the effluent mass discharge that dictates the instream concentration. Therefore, EPA recommends that permit limits on both mass and concentration be specified for effluents discharging into waters with less than 100 fold dilution to ensure attainment of water quality standards.”

The tentative Permit must be revised to include mass-based limits for all parameters capable of being expressed in terms of mass.

### **XIII. Effluent limits for metals were calculated using an incorrect hardness value and must be recalculated**

The Fact Sheet, at page 26, states “[e]ffluent Limitations must be set using the worst-case conditions (*e.g.*, lowest ambient hardness) in order to protect beneficial uses for all discharge conditions. Based upon 15 samples collected in 2004-05, the lowest receiving water hardness was measured as 100 mg/L as CaCO<sub>3</sub>.” However examination of the ambient data sheets reveals that a hardness of 91 mg/L as CaCO<sub>3</sub> was documented

on 11 May 2005. Effluent limitations for metals must be recalculated and revised using the lower hardness value.

**XIV. The permit has no Receiving Water Limitation for turbidity**

The proposed Permit discusses the basis for the Receiving Water Limitation for turbidity by stating “[a] numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity.” (Fact Sheet, p. 64). However, the Receiving Water Limitation for turbidity is absent in the permit. Federal Regulations, 40 CFR 122.44 (d)(1)(i), requires the permit contain a limitation if there is a reasonable potential for a discharge to exceed a water quality objective. The Order must be revised to include a Receiving Water Limitation for turbidity.

**XV. The permit inappropriately allows the permit to be reopened to reassess assimilative capacity of the receiving stream while end-of-pipe limitations may not be sufficiently stringent**

The Fact Sheet further discusses that the receiving stream is tidally influenced and flow rates at the point of discharge may reverse. In discussing a water quality model and a dilution study, the permit finds that: “The dye study verifies that the flow is essentially stagnant, there is little or no available dilution and with a wastewater discharge, the chemical characteristics of river water will approach that of the effluent. Consequently, there is no basis for dilution credit.” Contrary to further assessing dilution, the permit should require a study of the receiving water to determine if “end-of-pipe” discharge limitations are sufficiently stringent to protect the beneficial uses of the stagnant receiving stream. Confirming this recommended assessment, the Fact sheet, in the Discharge Points and Receiving Waters Section, states that: “Multiple dosing of the receiving water with effluent may occur as the tide moves the water column upstream and downstream past the outfall.” This information should be discussed in the antidegradation and CEQA analysis, yet is not even mentioned.

**XVI. The mercury mass loading limitation calculation is incorrect and the Permit must include a limitation for methylmercury**

The permit states that the “total” mass loading for mercury should be calculated using “...an average of all concentration data collected that month and the corresponding total monthly flow”. (Limitations and Discharge Requirements, p. 30). In order to calculate the “total” mass of mercury discharged during the month, each individual sample total should be added, not averaged. The formula should be (the total concentration discharged) times (the total flow monthly discharge rate) times (a conversion factor) equals the total monthly mass discharged.

Even more disturbing is the fact that the interim limitation was determined using the current permitted design flow of 5.4 mgd and the maximum observed concentration of 3.7 ng/l. (Fact Sheet, p. 40). The initial discharge to Old River (Phase II) is permitted at

3.0 mgd. Only in Phase III is the full permitted discharge of 5.4 mgd allowed. It is questionable whether the facility will reach 5.4 mgd within the life of the proposed Permit. With respect to interim limits under a compliance schedule, the SIP states that “[n]umeric interim limitations for the pollutant must be based on current treatment facility performance or on existing permit limitations, whichever is more stringent.” (SIP, p. 22). As the Fact Sheet points out, “[t]he SIP recommends the Regional Water Board consider whether the mass loading of bioaccumulative pollutants should be limited in the interim to ‘*representative current levels*’ pending development of applicable water quality standards or TMDL allocation. The intent is, at a minimum, to prevent further impairment while a TMDL for a particular bioaccumulative constituent is being developed. Any increase in loading of mercury to an already impaired water body would further degraded water quality.” (Fact Sheet, p. 40). Since there is presently no discharge to Old River, the appropriate mercury cap should be established as zero. In any case, it cannot be set higher than the Phase II level of 3.0 mgd. The entire purpose of interim limits is to hold pollutants to current levels. The proposed Permit facilitates an enormous increase in the discharge of a highly toxic bioaccumulative pollutant that is impairing the Delta and threatening the health of those who consume fish. Interestingly, increased mercury pollution was neither mentioned nor discussed in the antidegradation analysis.

The Order includes an interim effluent mass limitation, or cap, for total mercury. Inexplicably, it ignores methylmercury, the bioaccumulative and biodamaging form of mercury. Regional Board TMDL staff has consistently maintained that the pending Delta Mercury TMDL will require substantial reductions in the mass loading of methylmercury from wastewater treatment plants. The Order must include an interim cap on methylmercury loading.

**In summary, the Order is grossly non-protective, violates numerous regulatory provisions and must be revised to:**

1. Comply with SIP Section 2.1 which prohibits compliance schedules for new or recommencing discharges,
2. Include legally acceptable reasonable potential analyses,
3. Contain legal effluent limitation for EC, TDS and Chloride,
4. Include a legally defensible antidegradation analysis,
5. Prohibit acute toxicity,
6. Include an effluent limitation for chronic toxicity,
7. Comply with state and federal endangered species acts,
8. Include defensible temperature limitations,
9. Include necessary and protective monitoring requirements,
10. Comply with CEQA,
11. Include limitations for mass loading,
12. Use appropriate hardness values for calculating effluent limitations,
13. Include a receiving water limitation for turbidity,

14. Eliminate language allowing the permit to be reopened to reassess assimilative capacity of the receiving stream where end-of-pipe limitations may not be sufficiently stringent, and
15. Include a technically defensible mass loading limitation for mercury.

Thank you for considering these comments. If you have questions or require clarification, please don't hesitate to contact us.

Sincerely,

Original signed by Bill Jennings

Bill Jennings, Executive Director

California Sportfishing Protection Alliance